Amendments to and listing of the claims:

Please cancel claims 1-3, 40, 74, 76 and 88, and add new claims 89-129, without prejudice, as shown below in the following listing of all claims ever presented. The following listing of claims replaces all prior versions thereof.

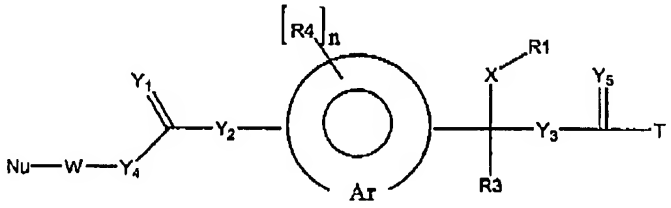
1-88. **(Canceled)**

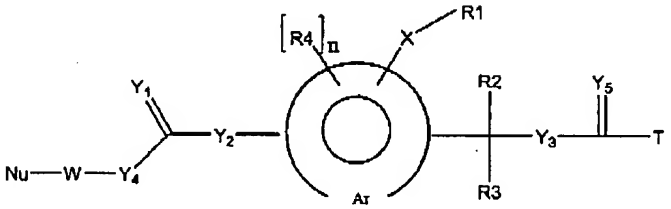
89. **(New)** A polymeric cascade prodrug or corresponding linker reagent comprising a compound having the general formula:

[Masking Group] - [Carrier] - [Activity Moiety]

wherein the active moiety represents a moiety selected from the group consisting of amine-containing biologically active drugs and leaving groups, wherein the masking group comprises at least one nucleophile, and wherein the masking group is different from the carrier.

90. **(New)** The polymeric cascade prodrug or corresponding linker reagent according to claim 89, wherein the prodrug or corresponding linker reagent corresponds to a structure selected from the general formula I and II:





wherein T represents D or A; D represents a residue of an amine-containing biologically active moiety; A represents a leaving group; X represents a spacer moiety; Y_1 and Y_2 each independently represent O, S or NR_6; Y_3 represents O or S; Y_4 represents O, NR_6 or $-C(R_7)(R_8)$; R_3 represents a moiety selected from the group consisting of hydrogen, substituted or

unsubstituted linear, branched or cyclical alkyl or heteroalkyl groups, aryls, substituted aryls, substituted or unsubstituted heteroaryls, cyano groups, nitro groups, halogens, carboxy groups, carboxyalkyl groups, alkylcarbonyl groups or carboxamidoalkyl groups; R_4 represents a moiety selected from the group consisting of hydrogen, substituted or unsubstituted linear, branched or cyclical alkyls or heteroalkyls, aryls, substituted aryls, substituted or unsubstituted heteroaryl, substituted or unsubstituted linear, branched or cyclical alkoxys, substituted or unsubstituted linear, branched or cyclical heteroalkyloxys, aryloxys or heteroaryloxys, cyano groups and halogens; R_7 and R_8 are each independently selected from the group consisting of hydrogen, substituted or unsubstituted linear, branched or cyclical alkyls or heteroalkyls, aryls, substituted aryls, substituted or unsubstituted heteroaryls, carboxyalkyl groups, alkylcarbonyl groups, carboxamidoalkyl groups, cyano groups, and halogens; R_6 represents a group selected from hydrogen, substituted or unsubstituted linear, branched or cyclical alkyls or heteroalkyls, aryls, substituted aryls and substituted or unsubstituted heteroaryls; R_1 represents a polymer; W represents a group selected from substituted or unsubstituted linear, branched or cyclical alkyls, aryls, substituted aryls, substituted or unsubstituted linear, branched or cyclical heteroalkyls, substituted or unsubstituted heteroaryls; Nu represents a nucleophile; n represents zero or a positive imager; and Ar represents a multi-substituted aromatic hydrocarbon or multi-substituted aromatic heterocycle.

91. (New) The prodrug according to claim 89, wherein the active moiety comprises an amine-containing biologically active drug selected from the group consisting of small molecule biologically active agents and biopolymers.

92. (New) The prodrug according to claim 90, wherein the residue of an amine-containing biologically active moiety represented by D comprises a biopolymer selected from the group consisting of proteins, polypeptides, oligonucleotides and peptide nucleic acids.

93. (New) The prodrug according to claim 91, wherein the active moiety comprises a biopolymer selected from the group consisting of proteins, polypeptides, oligonucleotides and peptide nucleic acids.

94. (New) The prodrug according to claim 89, wherein the active moiety comprises a polypeptide selected from the group consisting of ACTH, adenosine deaminase, agalsidase, albumin, alfa-1 antitrypsin, alfa-1 proteinase inhibitor, alteplase, anistreplase, ancrod serine protease, antibodies, antithrombin III, antitrypsins, aprotinin, asparaginases, biphalin, bone-morphogenic proteins, calcitonin, collagenase, DNase, endorphins, enfuvirtide, enkephalins, erythropoietins, factor VIIa, factor VIII, factor Villa, factor IX, fibrinolysin, fusion proteins, follicle-stimulating hormones, granulocyte colony stimulating factor, galactosidase, glucagon, glucagon peptides, glucocerebrosidase, granulocyte macrophage colony stimulating factor, phospholipase-activating protein, gonadotropin chorionic, hemoglobins, hepatitis B vaccines, hirudin, hyaluronidases, idumonidase, immune globulins, influenza vaccines, interleukins, IL-1 receptor antagonist, insulins, interferons, keratinocyte growth factor, transforming growth factors, lactase, leuprolide, levothyroxine, luteinizing hormone, lyme vaccine, natriuretic peptide, pancrelipase, papain, parathyroid hormone, PDGF, pepsin, platelet activating factor acetylhydrolase, prolactin, protein C, octreotide, secretin, sermorelin, superoxide dismutase, somatropins, somatostatin, streptokinase, sucrase, tetanus toxin fragment, tilactase, thrombins, thymosin, thyroid stimulating hormone, thyrotropin, tumor necrosis factor, TNF receptor-IgG Fc, tissue plasminogen activator, TSH, urate oxidase, urokinase, vaccines, and plant proteins.

95. (New) The prodrug according to claim 89, wherein the active moiety comprises a protein prepared by recombinant DNA technology.

96. (New) The prodrug according to claim 89, wherein the active moiety comprises a protein selected from the group consisting of antibody fragments, single chain binding proteins, catalytic antibodies and fusion proteins.

97. (New) The prodrug according to claim 89, wherein the active moiety comprises a protein selected from the group consisting of antibodies, calcitonin, G-CSF, GM-CSF, erythropoietins, hemoglobins, interleukins, insulins, interferons, SOD, somatropin, TNF, TNF-receptor-IgC Fc, and glucagon peptides.

98. (New) The prodrug according to claim 90, wherein the residue of an amine-containing biologically active moiety represented by D comprises a protein selected from the group consisting of antibodies, calcitonin, G-CSF, GM-CSF, erythropoietins, hemoglobins, interleukins, insulins, interferons, SOD, somatropin, TNF, TNF-receptor-IgC Fc, and glucagon peptides.

99. (New) The prodrug according to claim 91, wherein the amine-containing biologically active drug comprises a small molecule biologically active agent having at least one primary or secondary amino group selected from the group consisting of central nervous system-active agents, anti-infective agents, anti-neoplastic agents, antibacterial agents, anti-fungal agents, analgesic agents, contraceptive agents, anti-inflammatory agents, steroidal agents, vasodilating agents, vasoconstricting agents, and cardiovascular agents.

100. (New) The prodrug according to claim 91, wherein the amine-containing biologically active drug comprises a small molecule biologically active agent selected from the group consisting of daunorubicin, doxorubicin, idarubicin, mitoxantron, aminoglutethimide, amantadine, diaphenylsulfon, ethambutol,sulfadiazin, sulfamerazin, sulfamethoxazol, sulfalen, clinafloxacin, moxifloxacin, ciprofloxaxin, enoxacin, norfloxacin, neomycin B, sprectinomycin, kanamycin A, meropenem, dopamin, dobutamin, lisinopril, serotonin, acivicin and carbutamid.

101. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 90, wherein each R4 independently represents a substituent selected from the group consisting of hydrogen, methyl, ethyl, ethoxy, methoxy, linear alkyls having three or more carbon atoms, cycloalkyls, branched alkyls and C_{1-6} heteroalkyls.

102. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 90, wherein R1 represents a polymer selected from the group consisting of polyalkyloxy polymers, dextran, chitosan, hyaluronic acid and derivatives thereof, alginate, xylan, mannan, carrageenan, agarose, cellulose, starch, hydroxyethyl starch, carbohydrate-based polymers, polyvinyl alcohols, polyoxazolines, polyanhydrides, poly(ortho esters), polycarbonates, polyurethanes, polyacrylic acids, polyacrylamides, polyacrylates, polymethacrylates, polyorganophosphazenes, polysiloxanes, polyvinylpyrrolidone,

polycyanoacrylates, polyesters, polyiminocarbonates, polyaminoacids, collagen, gelatin, copolymers, grafted copolymers, cross-linked polymers, and block copolymers thereof.

103. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 90, wherein Rl represents a hydrogel.

104. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 90, wherein Rl represents a branched or hyperbranched polymer.

105. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 90, wherein Rl represents a dendrimer or dense star polymer.

106. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 90, wherein Rl represents a biopolymer.

107. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 90, wherein Rl represents a protein.

108. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 107, wherein the protein is selected from the group consisting of albumin, antibodies, fibrin, casein and plasma proteins.

109. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 90, wherein Rl further includes one or more biologically active substances bound to the polymer.

110. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 90, wherein Rl has at least one functional group for linkage to X, and wherein the at least one functional group is selected from the group consisting of carboxylic acid and activated derivatives thereof, amino groups, maleimide, thiol, sulfonic acid and derivatives thereof, carbonate and derivatives thereof, carbamate and derivatives thereof, hydroxyl, aldehyde, ketone, hydrazine, isocyanate, isothiocyanate, phosphoric acids and derivatives thereof, phosphonic acids and derivatives thereof, haloacetyls, alkyl halides, acryloyls, arylating

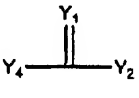
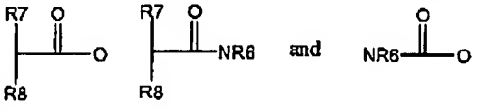
agents, hydroxylamines, disulfides, vinyl sulfones, vinyl ketones, diazoalkanes, diazoacetyl compounds, epoxide, oxirane, and aziridine.

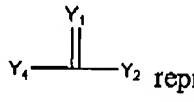
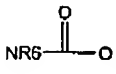
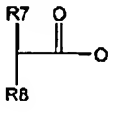
111. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 110, wherein the at least one functional group is selected from the group consisting of thiol, maleimide, amino groups, carboxylic acid and derivatives thereof, carbonate and derivatives thereof, carbamate and derivatives thereof, aldehyde, and haloacetyls.

112. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 110, wherein the bond formed between X and the at least one functional group is selected from the group consisting of disulfide, S-succinimido, amide, amino, carboxylic ester, sulphonamide, carbamate, carbonate, oxime, hydrazone, urea, thiourea, phosphate, and phosphonate.

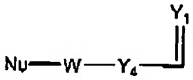
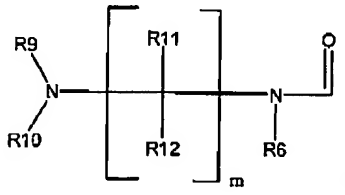
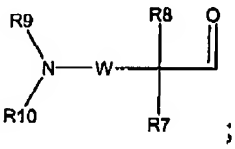
113. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 110, wherein the bond formed between X and the at least one functional group is selected from the group consisting of S-succinimido, amide, carbamate, and urea.

114. (New) The polymeric cascade prodrug linker reagent according to claim 89, wherein the active moiety comprises a leaving group selected from the group consisting of chloride, bromide, fluoride, nitrophenoxy, imidazolyl, N-hydroxysuccinimidyl, N-hydroxybenzotriazolyl, N- hydroxyazobenzotriazolyl, pentafluorphenoxy and N-hyroxysulfosuccinimidyl.

115. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 90, wherein  represents a moiety selected from the group consisting of  and

116. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 90, wherein  represents a moiety selected from the group consisting of  and  .

117. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 90, wherein R6 represents an additional Nu-W.

118. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 90, wherein  represents a structure selected from the group consisting of  and  ;

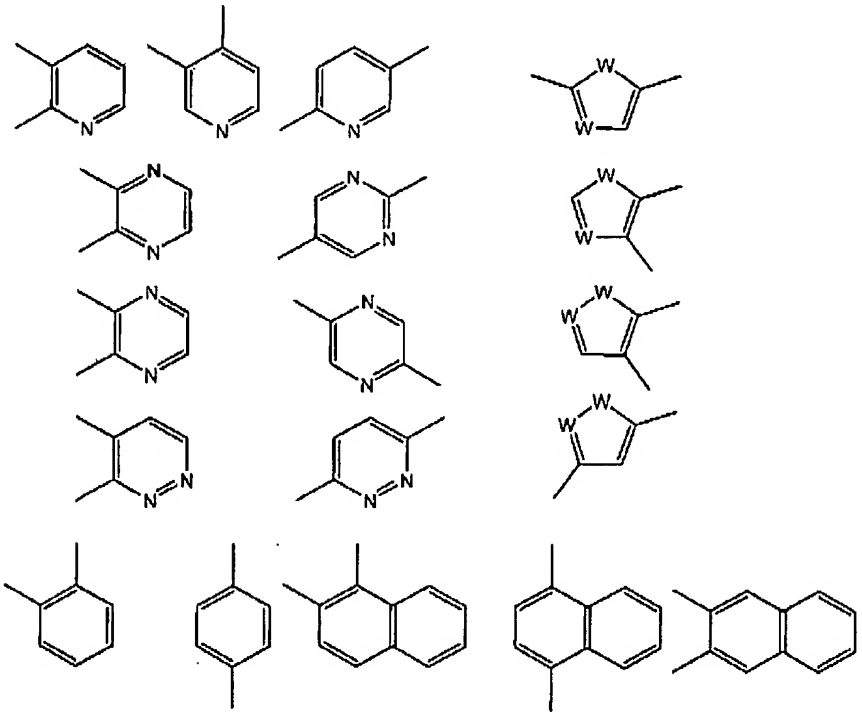
wherein R9, R10, R11 and R12 each independently represent a moiety selected from the group consisting of hydrogen, substituted or non- substituted alkyls or heteroalkyls, and substituted or non-substituted aryls or heteroaryls, and m represents an integer of 2 to 10.

119. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 118, wherein R9, 10, R11 and R12 each independently represent a moiety selected from the group consisting of hydrogen and substituted or non-substituted alkyls.

120. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 90, wherein Nu represents a nucleophile selected from the group consisting of primary, secondary and tertiary amino groups, thiols, carboxylic acids, hydroxylamines, hydrazine and nitrogen containing heteroaryls.

121. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 90, wherein Y_4 represents $-C(R_7)(R_8)$ and at least one of R7 and R8 is not hydrogen.

122. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 90, wherein Ar represents a structure selected from the group consisting of:



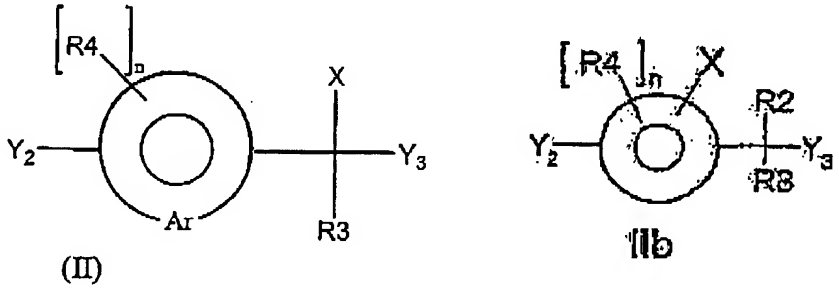
wherein each W independently represents O, S, or N.

123. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 90, wherein Ar represents a monocyclic or dicyclic aromatic hydrocarbon or aromatic heterocycle.

124. (New) The polymeric cascade prodrug or corresponding linker reagent according to claim 90, wherein the Ar represents a five-membered or six-membered aromatic hydrocarbon or aromatic heterocycle.

125. (New) A method for synthesizing a polymeric prodrug, the method comprising:

(a) providing a starting molecule corresponding to the general Formula II or IIb:



(II) IIb

(b) reacting the starting molecule with a masking group having a nucleophile to form at least one intermediate compound wherein the masking group is bound to Y_2; and

(c) reacting an amine-containing biologically active moiety D with the at least one intermediate compound to form a polymeric prodrug is formed;

wherein Y_2 is selected from O, S, or NR6; Y_3 is selected from O or S; X is a spacer moiety; R3 is selected independently from hydrogen, substituted or non-substituted linear, branched or cyclical alkyl or heteroalkyl. au. substituted aryl. substituted or non-substituted heteroaryl, cyano nitro, halogen, carboxy, carboxyalkyl, alkylcarbonyl or carboxamidoalkyl; R4 is selected from hydrogen, substituted or non-substituted linear, branched or cyclical alkyl or heteroalkyl, aryl, substituted aryl, substituted or non-substituted heteroaryl, substituted or non-substituted linear, branched, or cyclical alkoxy, substituted or non-substituted linear, branched, or cyclical heteroalkyloxy, aryloxy or heteroaryloxy, cyano, or halogen; R6 is selected from hydrogen, substituted or non-substituted linear, branched or cyclical alkyl or heteroalkyl, aryl, substituted aryl substituted or non-substituted heteroaryl; and Y_6 is O, S, NR6, succinimide, maleimide, unsaturated carbon-carbon bonds or a heteroatom containing a free electron pair; n is zero or a positive integer and Ar is a multi-substituted aromatic hydrocarbon or a multi-substituted aromatic heterocycle.

126. (New) A method for hydrolyzing a polymeric cascade prodrug or corresponding linker reagent according to claim 89, comprising providing the prodrug or

corresponding linker reagent and placing the prodrug or corresponding linker reagent in a solution with a pH of approximately 7.4.

127. (New) A method of administering an amine-containing moiety to an organism in need thereof, the method comprising providing a polymeric cascade prodrug according to claim 89, administering the polymeric cascade prodrug to the organism and cleaving the amine-containing moiety from the polymeric cascade prodrug by means of a substantially non-enzymatic reaction.

128. (New) A method of providing a therapeutically useful concentration of a biologically active molecule by *in vivo* cleavage of the biologically active molecule from the prodrug according to claim 89.